SECTION A. Project Title: INTEC – U-233 Waste Stream Disposition

SECTION B. Project Description

The proposed action will transfer 171 drums of U-233 waste from the Advanced Mixed Waste Treatment Project (AMWTP) to INTEC for verification, treatment, and repackaging for final disposition at the Nevada National Security Site (NNSS). The U233 drums are a portion of waste historically managed as transuranic as part of the 1995 Idaho Settlement Agreement.The waste management actions will be performed in CPP-659 or the Radioactive Mixed Waste Staging Facility (CPP-1617).

The bulk of the U-233 waste is from the Bettis Atomic Power Laboratory and consists of U-233/Th-232 contaminated materials (minor amounts of enriched, depleted and natural powders) generated in the 1970's during development of a civilian reactor station, the Light Water Breeder Reactor for the Shippingport Station. The waste is un-irradiated U-233 fabricated rod and pellet materials, scrap and debris wastes some of which is packaged in lead-lined 55-gallon drums and Department of Transportation 6M 110-gallon drums. This waste consists of four different waste streams (listed on page F-23, Table F-9, Existing Waste Stored at the TSA, Advanced Mixed Waste Treatment Project Final Environmental Impact Statement):

- combustible debris (one container),
- solidified grinding sludge (45 containers),
- metal samples-fissile (17 containers), and
- solid binary scrap powder (108 containers)

Due to the variability in the fissile content of the waste and 46 containers of waste are RCRA-regulated, several different treatment/disposal paths will be required. Containers that are RCRA-regulated but are not fissile exempt will be treated on-site, pending acquisition of a RCRA treatment permit modification prior to disposal. Containers that are not RCRA-regulated will be verified and repackaged as necessary on-site and sent off-site for disposal.

The on-site treatment will be macroencapsulation, which will be performed with the use of either commercially available HDPE macroencapsulation units or grout-based custom macroencapsulation units. For the commercially available HDPE units, waste is placed inside the unit, void spaces filled, and a HDPE lid is heat sealed to the unit using electrical resistance wires built into the lid. For the custom grout based units, a container such as a steel box has a form built within that container that allows an initial layer of grout to be poured leaving a void space surrounded by grout. The waste is placed within the void and void fill material is added as necessary. Additional grout is then poured within the box covering and completely encapsulating the waste.

Verification, repackaging and loading actions will be performed in CPP-659 or in an enclosed tent that would be erected in CPP-1617. A temporary structure may be placed within the RMWSF near CPP-1617 to support sorting, segregating, and macroencapsulation.

The proposed action is scheduled to begin in December 2012.

SECTION C. Environmental Aspects / Potential Sources of Impact

1. Air Pollutants – Performing characterization, treatment and repackaging activities will generate radiological emissions.

Radionuclide Emissions – Radiological emissions to the environment, including those from diffuse sources, must be determined for demonstrating compliance with the RAD NESHAP Standard (see 40 CFR 61 Subpart H). If any fugitive or point radiological emissions are released, the performing organization Project Manager or Source Owner/Manager shall ensure that the emissions were evaluated for permitting requirements. Calendar year emissions are determined and reported to Environmental Programs for the preceding year.

Prior to performing segregating/sorting and treatment activities, an air permitting applicability determination must be completed and approved.

4. Chemical Use and Storage – Chemicals will be used in support of macroencapsulation and decontamination actions. Project personnel will use non-hazardous chemical substitutes in the place of hazardous chemicals as long as the non-hazardous substitutes meet the requirements/specifications of the activity. Spill prevention/ minimization measures will be used during storage and use of chemicals/fuels. Applicable procedures will be used as guidance in procuring chemicals and materials.

9. Hazardous/Mixed Waste Generation and Management – A large quantity of the waste addressed in the proposed action is mixed waste. The generation of secondary mixed waste will be minimal. All mixed wastes will be stored, treated, and or disposed in compliance with applicable RCRA regulations.

The RCRA permit for CPP-1617 will require modification to allow for sorting and segregation of the waste and macroencapsulation waste treatment. The permit modification will be completed and approved prior to performing segregating/sorting and treatment activities within CPP-1617.

10. Hazardous/Rad. Material or Waste Handling and Trans. – A hazardous waste determination will be performed per MCP-1390 for all waste streams to develop the appropriate management practices. Waste streams will be evaluated to determine if any of the materials can be recycled or reused and to implement actions for minimizing waste entering the landfill.

11. Industrial Waste Generation and Management - Industrial waste will be generated in the form of tent material and packaging materials. This waste stream will be disposed of at the INL Landfill Complex. All potential waste materials will be evaluated prior to generation for waste minimization and materials will be evaluated for recycling.

16. Radioactive Waste Generation and Management – Activities performed inside contaminated areas will result in some radioactive waste. Typical types of waste will include anti-contamination clothing, radiation enclosures and barriers, contaminated materials and components, and contaminated HEPA filters. These materials will be packaged and disposed of through Waste Generation Services.

19. Work in Areas Subject to Flooding - The activities discussed are planned to occur in several locations on the INL site area, therefore, the potential for the activities to occur within the 100-year floodplains of the Big Lost River, and the overland flow 100-year floodplains from local watershed runoff at INTEC and RWMC was determined. Activities and facilities at the INL are considered to be within the 100-year Big Lost River ("riverine") floodplain if they are within the areas shown on site-wide map.

The AMWTP facility and the CPP-659 building are not within the 100-year floodplains of the Big Lost River or the RWMC or INTEC local watersheds. Portions of CPP-1617 are within the Big Lost River 100-year floodplain. Portions of Adams Boulevard near RWMC are within the RWMC local watershed 100-year floodplain and portions of Lincoln Boulevard near INTEC are within the Big Lost River 100-year floodplain.

The work described is not expected to have a significant impact on the 100-year floodplains discussed above and the work is not expected to disrupt floodplain dimensions, elevations, flow volumes, or velocities of the Big Lost River or the INTEC or RWMC watersheds. If the hypothetical flood(s) occurs, access to the work areas may be temporarily interrupted. Work can resume after floodwaters subside as access allows.

SECTION D. Determine the Level of Environmental Review (or Documentation) and Reference(s): Identify the applicable categorical exclusion from 10 CFR 1021, Appendix B, give the appropriate justification, and the approval date.

Note: For Categorical Exclusions (CXs) the proposed action must not: 1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, including requirements of DOE orders; 2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities; 3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; 4) adversely affect environmentally sensitive resources. In addition, no extraordinary circumstances related to the proposal exist which would affect the significance of the action, and the action is not "connected" nor "related" (40 CFR 1508.25(a)(1) and (2), respectively) to other actions with potentially or cumulatively significant impacts.

References: *Advanced Mixed Waste Treatment Project Final Environmental Impact Statement*, DOE/EIS-0290, January 1999.

Justification: Managing the U-233 waste as described was addressed and the environmental impacts analyzed in the referenced EIS. Performing this scope at INTEC facilities versus the AMWTP facilities – all located within the Idaho National Laboratory – does not generate new environmental impacts nor are the environmental impacts outside of the analyses documented in the EIS

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) ☐ Yes ☒ No

Approved by Jack Depperschmidt, DOE-ID NEPA Compliance Officer on December 15, 2012.